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SCIENCE NEWS LETTER

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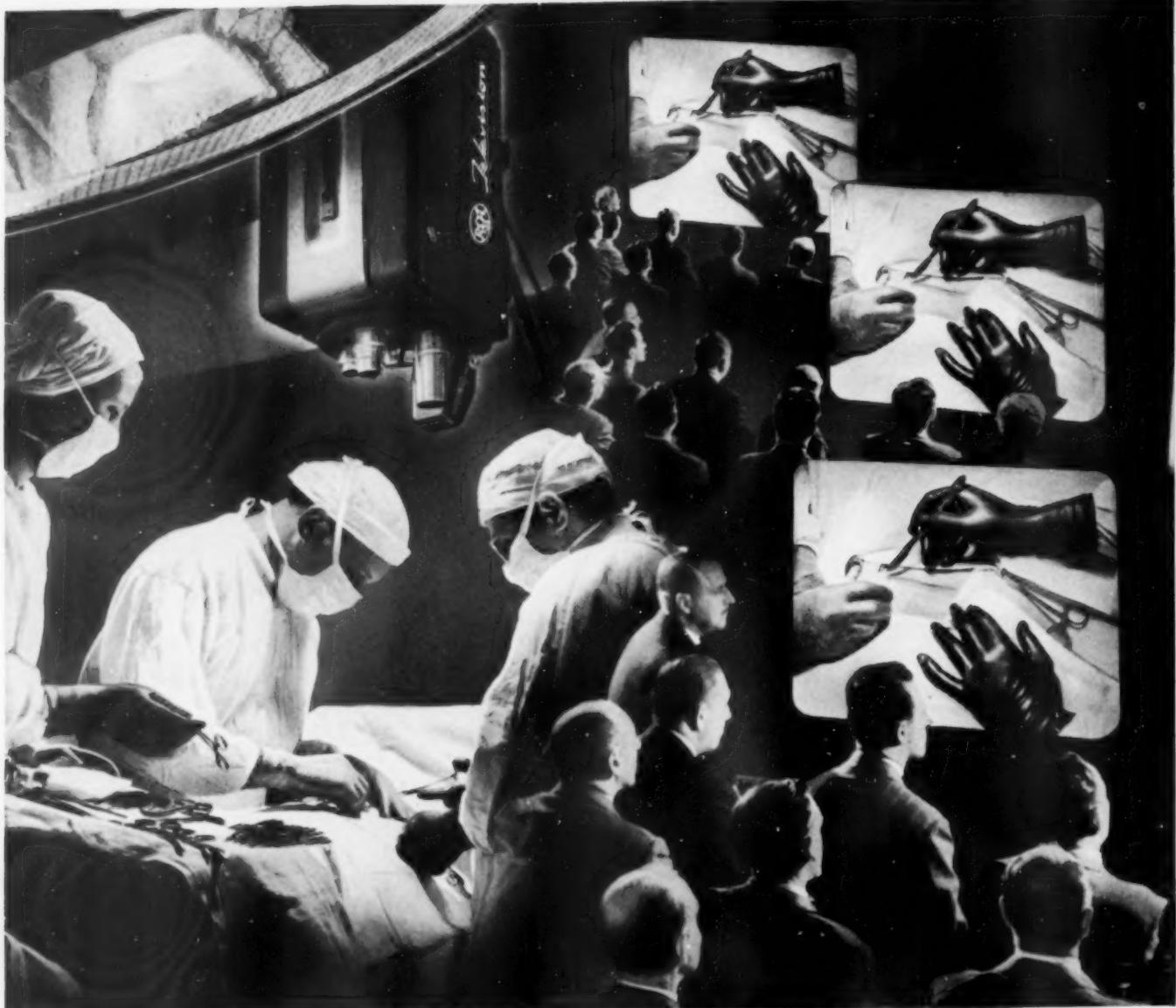
THE WEEKLY SUMMARY OF CURRENT SCIENCE • JAN. 26, 1940



Old At Sixty

See Page 58

A SCIENCE SERVICE PUBLICATION



Successful telecasts of surgical operations show value of television to medical education.

"Step up beside the surgeon—and watch"

Not long ago, a radio beam flashed across the New York sky—and "carried" more than 7000 surgeons into an operating room . . .

Impossible? It was done by television, when RCA demonstrated—to a congress of surgeons—how effective this medium can be in teaching surgery.

In a New York hospital, above an operating table, a supersensitive RCA Image Orthicon television camera televised a series of operations. Lighting was normal. Images were transmitted on a narrow,

line-of-sight beam . . . As the pictures were seen the operating surgeons were heard explaining their techniques . . .

The beam was picked up at a midtown hotel—carried to RCA Victor television receivers. And on the video screens, visiting surgeons followed each delicate step of surgical procedure. Action was sharp and clear. Each surgeon was as "close-up" as if he were actually beside the operating table.

Said a prominent surgeon: "Television as a way of teaching surgery sur-

passes anything we have ever had . . . I never imagined it could be so effective until I actually saw it . . ."

Use of television in many fields—and surgical education is only one—grows naturally from advanced scientific thinking at RCA Laboratories. Progressive research is part of every instrument bearing the names RCA or RCA Victor.

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RADIO CORPORATION of AMERICA

MEDICINE

Story Starts Cancer Gift

Jackson Memorial Laboratory, where mice are bred for cancer research, received \$50,000 as a result of a Science Service story, to rebuild its fire-ravaged buildings.

► HOW a Science Service story in a Florida newspaper, the St. Petersburg *Times*, brought \$50,000 to aid an internationally famous cancer research laboratory was told by Dr. C. C. Little, director of the Roscoe B. Jackson Memorial Laboratory, and Mrs. Evelyn B. Monaco, of Gallup, N. Mex., at a meeting in Washington of the Ladies Auxiliary, Veterans of Foreign Wars.

The story was one in which a Science Service writer reported that medical authorities expected the search for a cancer cure to be slowed for years because forest fires had destroyed the Jackson Laboratory at Bar Harbor, Me., and its invaluable collection of mice specially bred for cancer research. (See SNL, Nov. 8, 1947).

When Mrs. Anna Mae Shaw of St. Petersburg, a past commander of the Ladies Auxiliary, V. F. W., read that Science Service story, she immediately clipped it from her newspaper and sent it to Mrs. Monaco. Mrs. Monaco is chairman of the organization's cancer research fellowship fund.

Mrs. Monaco and Dr. Little reported that the gift, which may reach \$500,000, will go to rebuild the summer students' laboratory, dining hall and three residence halls.

The money will be collected entirely within the membership of the Ladies Auxiliary, V. F. W. Each of the 500,000 members will be asked to contribute one dollar. The initial gift of \$50,000 will be made this year and the group expects to continue its aid for the next two at least.

The plan for the organization to aid cancer research was started by Mrs. Dorothy Mann of Kansas City, Mo., at its last annual encampment in late August, 1947.

Mrs. Monaco, the wife of a surgeon who is a member of his state committee of the American Cancer Society, was looking "for a place to center our interests," she said, when she received from Mrs. Shaw the Science Service story clipped from a newspaper. She wrote Dr. Little at once, received his thanks and acceptance within three days, and after further conference the plans were

worked out. This is the first time the Ladies Auxiliary, V. F. W., has undertaken a program of aid outside the organization.

Their minimum initial gift of \$50,000 will be enough to have the school built by next summer, Dr. Little said. Present plans, he pointed out, call for a laboratory where 40 students can work, a dining and recreation hall and residence halls built in a quadrangle to be known as the Ladies Auxiliary, V.F.W., Summer Research Laboratory. Simple, one-story wooden buildings that need no heating plant are planned. This type of construction makes possible maximum speed at minimum cost.

The summer laboratory has been training promising young men and women for the cancer fight for 18 summers. For the same length of time, Dr.

Little and associates have been digging for more knowledge about cancer and its growth with their specially bred strains of mice. In one strain cancer of the lung will develop in eight out of every 10 mice. In another strain, only one in a 1,000 get lung cancer. Altogether there were mice of 20 different strains at the laboratory before the disastrous fire last October.

From this laboratory hundreds of thousands of mice have gone to laboratories all over the world. Over 300,000 were sent out last year before the fire in October destroyed the laboratory and most of the mice. They were used for research on influenza, pneumonia, tuberculosis, rabies, yellow fever and infantile paralysis as well as for cancer fighting.

One wing of the main laboratory that was left standing and part of another have been restored enough for Dr. Little and associates to continue their work. Still needed, however, is \$200,000 to match the same amount offered by the National Cancer Institute for completely rebuilding the laboratory. Funds are also needed to replace the library and to build residence bungalows for visiting



MAKING RESEARCH PLANS—A project for building a great summer training center at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me., is examined by (L to R) Mrs. Helen M. Murphy, Union, N. J., national senior vice-president, Ladies Auxiliary, V. F. W.; Mrs. Evelyn B. Monaco, Gallup, N. Mex., junior vice-president; Dr. C. C. Little, director of the Jackson Laboratory; and Miss Jane Stafford, Science Service Medical Writer. A story by Miss Stafford inspired the \$50,000 gift.



CANCER-FIGHTING CENTER—In the quadrangle at the left will be the laboratory for 40 students, dining and recreation hall, and residence lodges of the new summer school for student cancer fighters. At the right is the large building to house the laboratories, offices and famous mice of the Roscoe B. Jackson Memorial Laboratory. Not shown in the drawing but also planned if funds can be raised will be bungalows for visiting cancer researchers and their families.

scientists and their families and for an endowment for upkeep of the laboratory.

A summer center for cancer researchers from all over the world to work and

exchange ideas will develop if the hopes of Dr. Little, the American Cancer Society and the National Cancer Institute are fulfilled.

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MEDICINE

New Blood Center Starts

It will collect, process and distribute the blood free to those who need it. Rochester is first on this national life-saving program.

► MEN and women of Rochester, N. Y., and surrounding counties got the opportunity to be first to take part in a new life-saving, disease-fighting venture when Basil O'Connor, American Red Cross president, opened and dedicated the Rochester Regional Blood Center under the new national blood program.

Next time one of them reads in his newspaper that the life of someone in the region, an accident victim or a mother in childbirth, has been saved by a blood transfusion, he can say to himself, "I may have saved that life. It might have been my blood that was used."

The center will collect, process and distribute blood from and to the people of Rochester and the 11 counties in this region. Other centers, from here to California, will open rapidly one after another during the next few months.

The set-up is like that under which the Red Cross collected blood to save our wounded fighting men during the war. But it is a vastly expanded pro-

gram that is now getting under way. Civilians, as well as patients in Army, Navy and Veterans hospitals, will get the blood when they need it.

Bloodmobiles will go out into rural areas to collect blood and bring it to the regional center for processing. They will return it to hospitals and doctors serving rural areas for the benefit of people living there.

The blood will be free, a gift really from the hearts of Americans to their fellow-Americans in desperate need. The only charge will be whatever the hospital or doctor gets for the transfusion service.

Providing whole red blood for life-saving transfusions is the first aim of the program. But as the blood pours in and the banks grow full, some of it will be separated into fractions for fighting disease.

This is a measles year. Tens of thousands of children will catch this disease, but with the aid of one blood fraction, they can be protected against a severe

attack and its dangerous complications. Patients with hemophilia, others with a kind of kidney disease, still others having surgical operations can also be helped by different parts of the blood separated by methods devised by Dr. Edwin J. Cohn of Harvard.

Blood may have still undiscovered uses in fighting disease and death, Mr. O'Connor pointed out in his dedication of the center.

"All of us," he said, "I think have a strong feeling that this dedication is a milestone in the medical history of the country and in the improvement of healing and restorative facilities for our citizens. But none of us can foresee what tremendous scientific gains may result from the national blood program."

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MEDICINE

Extract To Check Defects

Gamma globulin, substance from blood plasma, given to mothers who contract German measles, may protect the unborn from feeble-mindedness and blindness.

► BABIES may be saved from being born feeble-minded, deaf, blinded by cataracts or with damaged hearts by a substance in the blood, Dr. Charles A. Janeway of Harvard Medical School declared at the opening of the regional blood center in Rochester, N. Y., first unit in the American Red Cross National Blood Program.

The substance is called a gamma globulin. One gamma globulin separated from blood plasma is already being used to reduce the severity of an attack of regular measles in children.

The gamma globulin that might prevent congenital cataracts, deafness, heart disease and brain damage is for German measles. This usually mild and unimportant disease, it has recently been discovered, can damage the unborn child if it attacks the mother during the early months of pregnancy. Some medical authorities have even suggested abortions in such cases to prevent the birth of a defective child. Dr. Janeway hopes the gamma globulin he is investigating could be given to the mother to protect the unborn child.

Advances in the fight against tuberculosis, cancer, heart disease and allergic disorders such as hay fever are other possibilities Dr. Janeway foresees from further research on other substances derived from blood. He is now using a blood derivative, or fraction, from animal blood to study experimental allergy in laboratory animals in order to learn more about the basic mechanism of these disorders. And another scientist is studying the tuberculosis germ by growing it in the clot made by the fibrinogen fraction of blood.

These fractions of blood are obtained as byproducts in the blood program. The primary object of the program is to make whole blood available without cost to victims of accidents, disease and injury anywhere in the nation. After three weeks, whole blood can no longer be used for transfusions. But its plasma can be removed and used or separated into the various fractions for study and treatment of disease.

Scientists feel sure that they have only begun to discover the disease-fighting

possibilities of these blood fractions. They have been handicapped, so far by lack of blood for such study. They and the sponsors of the National Blood Program look forward to the day when there will be enough blood centers throughout the nation so that more can be spared from the primary life-saving job for medical research.

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ENTOMOLOGY

DDT-Resistant Houseflies May Be Developing

► HOUSEFLIES which can survive the usual standard doses of DDT may be developing, the U. S. Department of Agriculture hinted in a report on DDT-resistant fly strains bred in the laboratory.

Only known flies which resist DDT and several other standard chemical killers are a strain developed at the Bureau of Entomology and Plant Quarantine laboratory in Orlando, Fla.

"It has been reported, however, that houseflies are becoming more difficult to kill with recommended applications of DDT in several parts of the United States and in some foreign countries," the Department of Agriculture acknowledged.

The hardy flies in the Florida laboratory are now in the 35th generation. As early as the third generation, it became necessary to use stronger doses of DDT to kill these flies. Ability to resist DDT is passed on to the flies' offspring, the experiments disclosed.

Bright side of the experiments is the conclusion that DDT has not lost its killing power. Entomologists believe that the ability to survive DDT of the new strain of flies may be more due to hardy, robust flies that might ordinarily require more than the usual dose of the insecticide. But if wild fly strains develop as much or even more DDT resistance as the laboratory insects have, future fly-fighting may be more complicated.

Not only DDT but also chlordane and chlorinated camphene, newly-developed chemical insecticides, and older standbys

including certain thiocyanate compounds, rotenone and pyrethrum, have failed to kill the hardy flies in the laboratory strain.

The 35 generations of flies in the laboratory would require four years in nature. Historic examples of insects developing resistance to standard chemical weapons used against them usually have required about two decades to appear.

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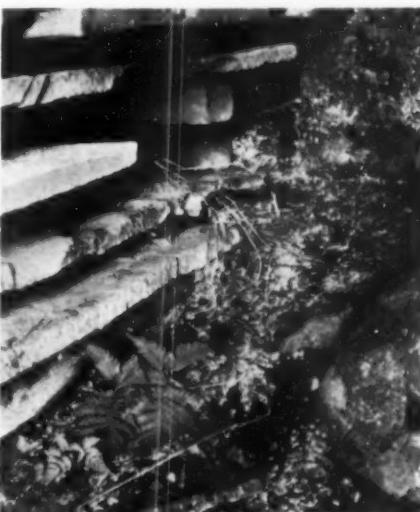
BOTANY

Moss That Shines in Dark Photographed in Own Light

► COLOR slides of one of the rarest plants in the world, a moss that seems to shine in the dark, were shown before the Sullivant Moss Society, an affiliated organization of the American Association for the Advancement of Science, by Prof. Charles J. Lyon of Dartmouth College. He found an abundance of the moss in a barn cellar at Groton, N. H., and was able to photograph it by its own light.

The moss is not really luminescent, but has an array of cells shaped like tiny automobile headlights. These catch and reflect the weak light entering its dim, damp abode, giving an effect that is startling to one not prepared for the sight.

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SHINING MOSS — The picture shows a luminous green layer of moss on the soil, believed to have been photographed for the first time in color by Dr. Charles J. Lyon, professor of botany at Dartmouth College, taken in the pocket between the lumber pile and the base of the stone foundation wall, all under a barn.

CHEMISTRY

New Candy Has Protein

Sweets incorporate as much as five per cent of the protein, derived from soybean, in hard taffy and as high as eight per cent in creams.

► CANDY that parents can urge their offspring to eat, instead of trying vainly to stop them, is the newest offering of chemists in the U. S. Department of Agriculture. The scientists have changed the sticky sweets into better-balanced foods by the addition of protein to their present all-carbohydrate makeup.

Dr. Louis B. Howard, chief of the Bureau of Agricultural and Industrial Chemistry, states in his annual report, just issued, that a clean-colored, tasteless soybean protein has been prepared and that it has been possible to work as much as five per cent of this into the familiar pulled hard taffy that children love. Soft candies, like nougats and cast creams, can now be made with protein contents as high as eight per cent.

Chocolate-coated marshmallows richly flavored and colored with raspberry puree are another yummy-sounding delicacy dreamed up by the Bureau's chemists.

However, the Department of Agriculture's laboratories are not being turned into one vast candy kitchen. Many products of great industrial promise, even if not so sweet, have been turned out during the past year.

One of these is a strong strawboard that may become useful in packing crates in place of the increasingly costly wood veneer now used. Eventually straw may also get into the building business, competing with the cane-bagasse and wood-fiber sheets now familiar. Since more than three-quarters of the 70,000,000 tons of straw annually produced in the United States goes to waste at present, there appears to be plenty of raw material available.

Dark, unappetizing color in both cottonseed oil and cottonseed meal can be practically eliminated, chemists at the Southern Regional Research Laboratory in New Orleans demonstrated. Two pigments found in cottonseed kernels were the cause of most of this color, and it was found possible to get rid of them by simply adding moisture when the stored seed was cooked in steam-jacketed pans.

One of the two pigments, known as gossypol, has been blamed for the slight

poisonous effect of cottonseed meal that has limited the use of this otherwise excellent source of protein in animal feeds. Hens fed on cottonseed meal produced by the new method laid a higher percentage of hatchable eggs than similar birds fed on the old-process meal.

Paint-brushes made from milk are now a possibility. At the Eastern Reg-

ional Research Laboratory at Philadelphia, casein fibers are being produced that compare favorably with natural bristles as paint-spreaders. One commercial firm has a pilot plant for their production in operation now, and as soon as manufacturing kinks can be ironed out will put the new-type brushes on the market.

Sumac leaves, at present valued only for their red beauty in autumn, bid fair to get a job at the tannery. Analyses show that they contain high percentages of tannin. The lining of pecan shells, that has such a puckering effect on your mouth if you chance to get a bit of it, is another possible source of tannin which is being investigated.

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DENTISTRY

Decay Preventive Tested

► THE sweetest method yet proposed for preventing toothache and tooth decay is going on trial in a special colony of rats kept by Dr. James H. Shaw at Harvard School of Dental Medicine.

The method consists in adding a rare sugar, glyceric aldehyde, to ordinary sugar. For preventing tooth decay in humans, the plan calls for adding this

or some other effective chemical to sugar at the refineries. Then every piece of candy eaten, and every lump of sugar would carry its own decay preventive.

The plan was proposed by Dr. L. S. Fosdick of Northwestern University Dental School at a meeting of the American Public Health Association (See SNL, Oct. 18, 1947).



DISCOVERERS OF CHEMICAL CURE—Dr. T. D. Fontaine and Dr. G. W. Irving, Jr., are inspecting tomatin, the antibiotic made from juice pressed from leaves and stems of the tomato plant, which they developed at the U. S. Department of Agriculture's experiment station at Beltsville, Md. (See SNL, March 22, 1947.)

MEDICINE

Histadyl Is Ally of Drugs

This newest comer to the anti-allergy group prevents side reactions from such life-saving remedies as penicillin and streptomycin when given with them.

► PATIENTS no longer need to be excluded from the benefits of such life-saving remedies as penicillin and streptomycin because of allergic reactions. A new synthetic drug called Histadyl prevents their formation when given with other drugs in treatment, Dr. M. H. Mothersill of the medical department of the Lilly Research Laboratories, told the Indiana Section of the American Chemical Society meeting in Indianapolis.

The usefulness of many drugs has been limited because of the increasing number of side-reactions which accompanied their administration in patients. Dr. Mothersill treated such a group of 16 patients suffering from drug allergies with Histadyl given by mouth and found that it produced sufficient relief for the patients to tolerate the reaction-causing drug for "indefinite periods." Only one patient in this group failed to gain relief.

The dramatic action of Histadyl was demonstrated in a seven-year-old girl who had to have streptomycin, according to Dr. Mothersill. She was able to take one gram of the remedy daily for

three months with this new ally, but when the anti-allergy compound was withdrawn, the girl had skin eruptions which caused intense itching and burning.

Other conditions for which this latest member of the anti-histamine family of drugs is effective, are hay fever, food allergies, allergic headaches and even in some cases of reaction following blood transfusion.

Such side-reactions as drowsiness and lightheadedness were the only undesirable effects of the new drug. The physician declared that "rarely did these symptoms interfere with the patient's ability to continue the routine." Five patients examined expressly for the purpose of determining any accumulative bad effects from the drug, showed no evidence of damage to the blood, heart, liver or kidneys, although they had been taking the drug daily for three months.

But the physician believes that a study of a larger group of patients is necessary before it can definitely be assumed that no bad effects will follow.

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MEDICINE

Surgery Remedies Sterility

► MANY of the younger men in Europe who were sterilized by surgical operation under the Nazi regime can have another operation which will permit them to become fathers if they wish, Dr. Vincent J. O'Conor of Northwestern University Medical School declares.

The second operation may be successful in from 35% to 40% of the patients, he reports in the *Journal of the American Medical Association* (Jan. 17).

The figures are based on his own experience and that of 750 surgeons among 1,240 to whom he sent questionnaires on the subject. The possibility of success will depend, he states, on the freedom of the tissues from previous inflammation.

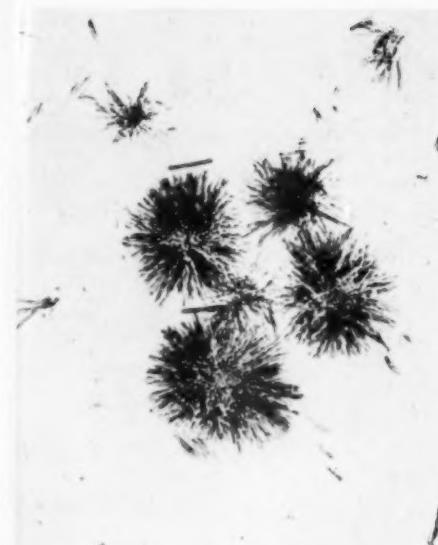
The normal male sex glands continue to produce spermatozoa, or male germ cells, for an indefinite period after the sterilizing operation. In one of Dr. O'Conor's patients an operation 18

years after the sterilizing operation was successful in restoring the patient's ability for parenthood.

The hopeless view taken by medical as well as lay and religious groups on the possibility of Hitler's victims being restored to normal after the sterilizing operation should be revised, Dr. O'Conor thinks, and surgical aid offered to those who request it. The reason for the hopeless view, it appears from his report, is that no one surgeon has had much experience with the corrective operation. This is because in the past most of the sterilizing operations have been done at the request of the patient and few of them have ever wanted to have their fertility restored.

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An even number of rows of grain are found on nearly all ears of corn.



TOMATIN CRYSTALS — They have been found effective against athlete's foot fungi and other fungus growths and parasitic yeasts which cause disease in man and animals, including the fungi that produce skin and scalp ringworm.

Adding the chemical to sugar would stop tooth decay by checking the ferment which causes acid to be formed from sugar in the mouth, Dr. Fosdick explained. The acid, if not promptly neutralized, breaks down tooth enamel, removing the calcium, or lime, which makes it hard. Cavities form and the decay process sets in.

Announcement of the tests at the Harvard rat colony of Dr. Fosdick's method was made by Dr. Robert C. Hockett, scientific director of the Sugar Research Foundation.

Results of the tests should be known by May, he said. If the method works in rats, there is every reason to believe it will work in human mouths.

Glyceric aldehyde, the chemical to be added to sugar for preventing tooth decay, is such a rare substance that only two pounds of it are known to exist anywhere in the world. Almost all of this two pounds is in the possession of the Sugar Research Foundation. Dr. Fosdick obtained a small vial of it, made before the war in Europe, through the efforts of Dr. H. O. L. Fischer, son of the distinguished carbohydrate chemist, Emil Fischer. Dr. Fischer made the rest of it available to the Sugar Research Foundation as part of the program to discover uses for some of the 10,000 close chemical relatives and derivatives of common sugar.

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MEDICINE

**Count Heart Beats
By Blowing Smoke**

► YOU can count your heart beats by blowing smoke rings. This discovery may lead to a new approach to study of the arteries, a scientist of Edinburgh, Scotland, has suggested.

C. A. Beevers of the Dewar Crystallographic Laboratory explains his discovery in the new issue of the British scientific Journal, *Nature* (Jan. 10).

"Choose a quiet room, fill the mouth with tobacco smoke and blow gently out through a very small aperture between pursed lips," he directs.

The fine jet of smoke will pulse from between your lips at intervals corresponding to your heart beat.

"With a delicately controlled jet it is even possible to make the heart blow a smoke ring at each beat."

The Scottish scientist explains that the heart is giving a pulse of pressure to air in your mouth.

"The pressure pulse may be communicated directly through the heart wall, or perhaps it is given by way of the arteries to the throat and mouth."

Use of a quick-acting pressure-measuring device may make it possible to gain useful information about the conditions of the arteries responsible, he proposes.

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AERONAUTICS

**Squatting Cargo Plane
Makes Loading Easier**

► A CARGO plane that squats down close to the ground for loading and unloading, instead of requiring the use of a heavy ramp or a mobile freight elevator, is a newly patented invention. The design is by Camille R. Lemonier of East Aurora, N. Y., and Samuel T. Payne of Kenmore, N. Y., who have assigned rights in their patent, No. 2,434,464, to the Curtiss-Wright Corporation.

On alighting at a landing field, the plane taxis up to a stack of waiting cargo. There the landing-gear is half-retracted, letting the fuselage down until its belly touches the ground. Then two segments of its nose fold upward on hinges, leaving a wide front entrance. At the same time a smaller part of the forward fuselage wall hinges downward until its free edge touches the ground, serving as a short, built-in ramp.

After the loading crew have stowed

and secured the cargo and the big front opening is closed, the hydraulically operated landing gear heaves the fuselage up to normal starting height and the plane is ready to take off. Once aloft, the landing gear is fully retracted, stowing the wheels into recesses that lie partly in the upper part of the fuselage and partly in the roots of the high wings.

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MEDICINE

**Devil's Grip Catching,
Doctors Find in Epidemic**

► A STRANGE disease called devil's grip has been epidemic in Boston and Baltimore last summer and fall, Drs. H. M. Harvey, Philip A. Turnuly, Frederick R. Bang and Charles I. Leftwich of Johns Hopkins School of Medicine reported at the meeting of the Southern Medical Association in Baltimore.

Medical name for the disease is pleurodynia, meaning pain in the chest. In Dr. Harvey's opinion, this pain-in-the-chest disease is another form of a pain-in-the-neck condition which doctors call cervical myalgia. Both, he believes, are caused by a virus. They are catching diseases, probably spreading by direct contact. In the Baltimore epidemic the first patient seen was the wife of one of the resident doctors at the Johns Hopkins Hospital. The next two patients were friends of hers, one a nurse who took care of her.

The disease starts suddenly, without previous warning signs, with a severe pain in the lower chest. This pain is made worse by deep breathing, coughing and sneezing. The temperature suddenly rises to 102 or 103 degrees Fahrenheit and returns to normal within 12 to 48 hours.

After two or three days, there may be a second rise in temperature. The patient may also have a severe headache in the forehead region.

The patient usually is well in two to seven days, though occasionally the disease lasts as long as two or three weeks.

No deaths have ever been reported from this condition. The first reported epidemic was in Charlottesville, Va., in 1888. Almost all outbreaks have been in late summer and early fall and in the U. S. have been in eastern seaboard cities. Outbreaks in Sweden have usually been along the coastal area.

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ENGINEERING

**Dual Fuel System for Use
In Automobiles Suggested**

► Dual fuel systems for automobiles and other motor vehicles were recommended at the Detroit meeting of the Society of Automotive Engineers by W. M. Holaday, Socony-Vacuum Laboratories, New York City. Two different grades of gasoline would be used.

One of the fuels in this dual system would be gasoline high in performance value and would be used for short periods. The other would be a lower-quality fuel for normal cruising operations.

Current spot shortages in motor fuel arise chiefly from lack of transportation and refining facilities in certain areas, he declared. Higher prices for petroleum fuels and lubricants must be expected because of the higher cost of production. Discovery costs of crude oil were estimated by him to have risen to an average of 54 cents a barrel in 1946, compared with 16 cents in 1936. The average investment in a new well approximates \$600,000, partly due to the necessity of drilling to lower depths.

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ENGINEERING

**Porcelain May Replace
Metal Blades in Turbines**

► THE use of refractory porcelains as material for blades of the turbines of turbo-jet powerplants is a promising possibility, the Detroit meeting of the Society of Automotive Engineers was told by R. F. Geller of the National Bureau of Standards, Washington. Porcelains have been found which can replace metallic alloys at temperatures above 1,500 degrees Fahrenheit.

He pointed out that, at high temperatures, a porcelain blade with a tensile strength of 17,000 pounds per square inch would be the equivalent of a metal having a strength of 47,000 pounds per square inch. The new porcelains, he said, suggest ways and means of increasing the net efficiency of turbine powerplants by permitting operation at temperatures of 1,800 degrees Fahrenheit, and higher.

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IN SCIENCE

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E FIELDS

VETERINARY MEDICINE

Nitrogen War Gases Used As Medicine for Chickens

► NITROGEN mustard war gases may turn out to be good medicine for chickens sick with the highly fatal fowl disease, leucosis, it appears from studies by E. P. Johnson at the Virginia Agricultural Experiment Station at Blacksburg, (*Science*, Jan. 9).

Fowl-leucosis is something like the group of human diseases which include leukemia, Hodgkin's disease and lymphosarcoma. Nitrogen mustards have been tried in these human diseases with results which Mr. Johnson thought "sufficiently encouraging" to warrant their trial on the fowl disease.

He injected the war gas chemicals into 33 birds artificially infected with the fowl leucosis virus. After one treatment, nine birds recovered completely. In another group of seven birds that got the disease through naturally acquired infection, the treatment helped one make a complete recovery that lasted eight months. The others were not helped.

The results, which Mr. Johnson terms "not highly impressive," show that if the compounds are given early in the disease they have a better effect and one which is more likely to be permanent. In advanced cases the effects were only temporary.

Besides apparently acting to check the too great multiplication of certain blood cells, the nitrogen mustards seem to kill the virus that causes the fowl disease.

Science News Letter, January 24, 1948

POPULATION

Population Increase in 1947 Sets New Record

► A NEW record for population increase was set in 1947. Thanks to an extraordinarily large number of births and to a low death rate, the excess of births over deaths exceeded 2,400,000 last year.

There may well be 150,000,000 people living in the United States by the end of 1950, statisticians of the Metropolitan Life Insurance Company estimate.

The natural increase in our population during 1947 is more than double that for

each year from 1930 through 1940, and is nearly three times that for 1936, figures compiled by the Social Security Administration show.

The excess of births over deaths during the year just ended was almost as large as the average number of babies born each year in the decade between 1930 and 1940.

About 3,900,000 babies were born in the United States in 1947. This was the first time in our history that the stork made more than 3,500,000 trips to homes in this country. It was the fourth time—each time being within the present decade—that more than 3,000,000 babies were born during any one year.

About 27 babies were born for every 1,000 people in the United States during the past year. This is the highest birth rate in at least 25 years, and is 50% above the figures for 1933, when the birth rate dropped to its lowest level.

In recent years there has been a remarkable improvement in infant mortality. The rate has been reduced by one-third since 1939 and by one-half since 1930. Although about as many infants died last year as in 1933, the number born was 70% higher. About 100,000 babies were saved by the reduction in infant mortality.

It is likely that the death rate in 1947 will prove to be the lowest ever recorded, the statisticians point out. This would result from making adjustments to take care of the increase in the number of babies and of older people. The general death rate in 1947 was slightly higher than in 1946, provisional figures indicate.

Science News Letter, January 24, 1948

ASTRONOMY

Astronomical Observatory To Be Built in Michigan

► NEW secrets of the sun and stars may be discovered through erection of an astronomical observatory at the University of Michigan. To be equipped with a 24-inch Schmidt-type reflecting telescope, this observatory is expected to be completed within the year.

One of the world's centers for solar research is the McMath-Hulbert Observatory, operated by the University near Pontiac. During the war, investigators at this observatory developed the bombsight used by the Navy. Today reports of solar activity secured here are vital in making up-to-date predictions as to whether shortwave radio broadcasts will come through clearly or be blacked out.

Science News Letter, January 24, 1948

AERONAUTICS

Safer Forced Sea Landings Provided by Hydro-Flaps

► SAFER forced sea landings by some of the new Navy land-based patrol planes will result from hydro-flaps installed on the belly of the fuselage. These downward, backward fin-like surfaces, closed into the plane ordinarily, will act like skis to keep the nose of the landing plane out of the water.

They are of assistance only in making the landing and during the ditching run. Their advantage is their ability to delay the immediate sinking that is apt to follow a nose dive. Also they will lessen the excessive strain when the aircraft hits the water that sometimes causes it to break in half.

These hydro-flaps are much like the so-called hydro-foils used on speed boats to lift their hulls completely out of water when traveling at high speeds.

Science News Letter, January 24, 1948

PHOTOGRAPHY

Improve Colored Prints With Chemicals in Films

► PHOTOGRAPHERS will get better colored prints by the use of chemicals called colored couplers in a film which give automatic color correction, it is revealed by Eastman Kodak Company. A coupler is a chemical which combines with others to produce a dye.

In a new color film, special types of couplers will be included in each of the thin light-sensitive layers. These are the blue, green and red sensitive layers. A yellow filter layer, also in the film, protects the green and red sensitive layers from blue light.

The problem of compensation for the unwanted absorption of light is now solved chemically. The new method is based on the discovery that azo dyes giving the proper absorption can be attached to couplers, and that during the coupling reaction the azo group is eliminated.

The result of the coupling reaction is, therefore, to destroy the inherent color of the coupler in the process. After color development there are present in the emulsion layer a negative image of the coupler dye and a positive image of the remaining unreacted coupler.

The new film containing the color couplers is not yet on the market. When it is, it will be known as Ektacolor.

Science News Letter, January 24, 1948

ZOOLOGY

Man Outlives Animals

Despite legends to the contrary, only giant tortoises live longer than man. Elephants have a life expectancy of 45 and the oldest parrot on record died at 54.

By DR. FRANK THONE

See Front Cover

► EXCEPT for a few species of giant tortoise—and who wants to be a tortoise?—man lives the longest life of any animal on the face of the earth.

Threescore years and ten was the lifetime assigned to man by the Psalmist, and that is still counted a fair old age after 30 centuries. And just as David and other Old Testament writers lamented the brevity of human life, people today feel that 70 years is not enough, and envy animals reputed to reach extreme ages of 300 or 400 years.

If there is any consolation in living longer than other creatures, we have it. Our seven decades, short though they seem, really represent a longer life-span than that of all except some species of giant tortoise.

Among his nearest animal kin, the warm-blooded mammals, man is easily the patriarch.

Old legends die hard, and the idea that man is the longest-lived of warm-blooded creatures will be disputed by many. Nevertheless, this view is supported by a careful examination of all really verifiable records, made by many zoologists and collated by R. Marlin Perkins, director of the Lincoln Park Zoo in Chicago. A considerable share of his figures come from Maj. Stanley Smyth Flower of the Zoological Society of London, the rest from American zoological parks.

Represent Extreme Ages

All figures represent extreme ages reached by animals in captivity. There are no reliable figures for the life-spans of wild animals, but it is probable that most of them are shorter than the limits attainable in captivity. The relentless law of the jungle, that killers eat the old and the weak first, would seem to take care of that.

Three animals that are often reputed to outlive man by many years, even to fantastic limits, are elephants, parrots and the giant tortoises of the Galapagos islands. Actually, the greatest surely

known age for an elephant is 60 years, with an average life expectancy of 45. The oldest parrot on record died at 54; other parrots have lived to be nearly 50. Cockatoos, closely related to parrots, reach ages between 30 and 40 years.

Only the tortoises outlive man, though the claims of 300 years and more cannot be authenticated. The Galapagos tortoise is known to live more than 100 years; another species, Marion's tortoise, holds the record at 152 years. Size does not have any necessary correlation with age; the little Carolina box turtle has been known to live as much as 123 years, whereas the big, mean-tempered alligator snapping-turtle can claim only 42. Also, the loggerhead, a sea turtle that rivals or surpasses the Galapagos tortoises for size, doesn't quite make the 40-year mark.

Reptiles Don't Live Long

Other reptiles do not live as long as the oldest tortoises. There is an acceptable record of more than 56 years for an American alligator, 50 years for its Chinese cousin. Snakes are even shorter-lived: the anaconda age record is 29 years, but two other huge constrictor snakes, Indian python and Madagascar boa, have only 20 years to their credit. The cotton-mouth moccasin, menace of our own Southern swamps, beats that score a little with 21 years. Most lizards die before they are 20, but one strange and little-known species, the legless European slow-worm, has been known to survive as long as 32 years.

Next to man's 70 to 100 or more years, and the elephant's 45 to 60, greatest longevity among mammals is claimed for the rhinoceros, with 36 to 50 years. Horses are fairly long-lived, reaching 15 quite often, with an extreme of 35. The lion, long hailed as King of Beasts, has a short reign of only eight to 15 years—less than many an old dog and no more than some tough tomcats. The industrious beaver outlives the sly fox, with an extreme age limit of 15 years against 12. And only the immortal reindeer of Santa Claus live more than 15 years.

Why have elephants and parrots been picked out for longevity honors that prove to be fictitious? And why are tortoises credited with being three or four times as old as they actually are?

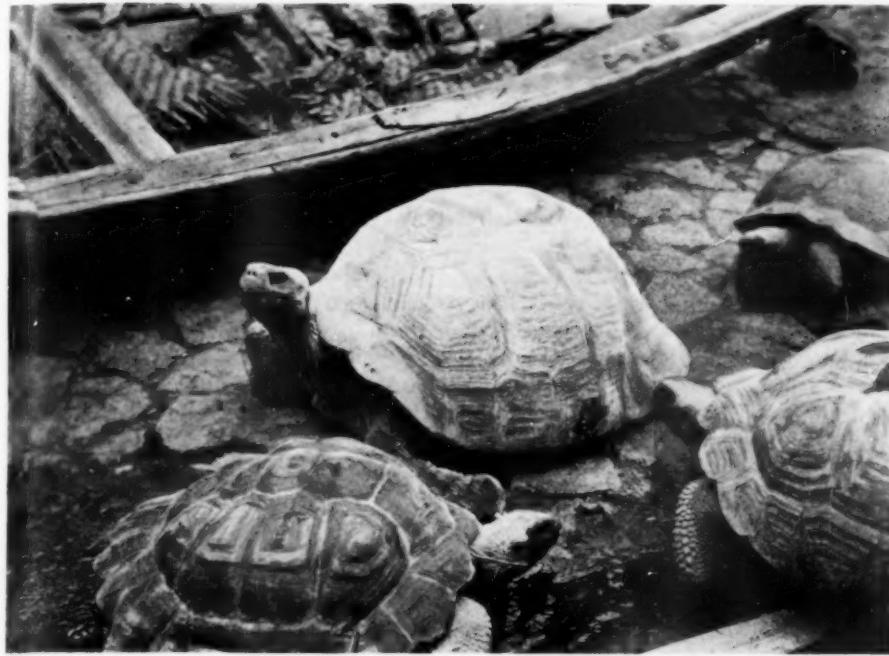
The answer may be in a curious quirk of "anthropomorphizing"—the tendency to read human meanings into non-human lives because of chance resemblances. Parrots have wrinkles in the bare skin around their eyes; tortoises have wrinkles on their legs and necks; elephants are wrinkled all over. All three animals are slow-moving. Old men are wrinkled and move slowly. That is enough to create a myth in sufficiently uncritical minds.

Antiquity of Pets

There are a few histories of apparent vast age in certain animals—usually mascots or pets. It is relatively easy for such records to be manufactured, and with no intentional deception, either. An animal will be adopted into a family or a regiment, live to a respectable age, and die. Another of the same species will be taken up as a replacement, given the same name, and because there is no carefully kept written record will eventually be remembered by a great-grand-



NOT AS OLD AS YOU THINK—
Legend has it that parrots are able to outlive man by many years. Actually, the oldest parrot on record died at 54 while others have been known to live to be nearly 50.



OUTLIVE MAN—Tortoises consistently top the century mark but no one has been able to prove the fantastic claim that they live to be 300 and more years old.

sire or an old retired sergeant as the same animal.

That sort of thing is known to have happened among human beings, where, for example, a John Smith is in a parish record as having been born in 1800, and a very old John Smith is equally well recorded as having died in the same place in 1940. But that does not prove that John Smith was 140 years old when he died. The John Smith who died in 1940 was perhaps the son or even the grandnephew of the John Smith who was born in 1800. If one death went unrecorded and one birth was similarly neglected, such a confusion could easily arise.

One quite understandable human trait helps to account for the easy acceptance of such fantastic claims, whether for old men or old animals. We all like to claim association with the biggest, the strongest, the oldest, even the loudest and funniest; there is some kind of nourishment for our self-esteem in this reflected glory, no matter how thin. So there is a temptation, usually unresisted because unrealized, to take your neighbor's word for it if he says his parrot was handed down in the family from his seafaring great-grandfather and is undoubtedly 200 years old.

There is a definite cash value, of course, in the claims to antiquity advanced by circuses on behalf of their

animals, especially elephants. Every circus elephant becomes a centenarian as soon as she has her full growth, and remains that way until she dies of old age at 60. This reversal of the glamorization process employed on female entertainers of our own species is one of the conventions of circus life; it is frankly fictional and nobody is expected to believe it. Ironically, too, although the people of the big top always refer to elephants as "bulls," all circus elephants are females—for the quite practical reason that they are much more docile and manageable. They don't even object to having their ages falsified upwards.

Science News Letter, January 24, 1948

ZOOLOGY

Protozoa Researchers Form New Scientific Society

► RESEARCHERS on the smallest and simplest of animals, the myriad microscopic life-forms known as protozoa, have founded a new scientific organization, the American Society of Protozoologists.

First president of the new group is Dr. Ross F. Nigrelli of the New York Aquarium. Prof. Theodore L. Jahn of the State University of Iowa is secretary-treasurer.

Science News Letter, January 24, 1948



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During 1947, American rubber companies used over 1,100,000 tons of synthetic and natural rubber.

A total of 961 aircraft are now in commercial service in America; of these, 168 are on routes to foreign countries.

Investigations of ancient civilizations show that vegetable tanning processes for making leather have been known since the dawn of history.

Magnesium is the lightest of the present commercial metals; aluminum is 50% heavier, steel weighs four times as much, and copper five times as much.

The so-called twinkle of stars is due mainly to regions of different density in the earth's atmosphere which are moved around with normal air movements.

"Wet water" is a term used by chemists for water containing organic chemicals known as wetting agents that cause a fast penetrating action by the mixture.

Moored balloons six feet or more in diameter must be operated under government permit if used in zones or at altitudes where they are a hazard to aircraft.

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MEDICINE

Cold Germ Is Isolated

V14A, as it is called, has been grown on fertile hen's eggs for almost a year. Fifty-seven of 60 healthy men sprayed in the nose with it got mean colds.

MEET V14A. It has just made its formal bow to the world of science, though you and many a scientist are doubtless already well acquainted with it. V14A will give you a mean cold when you do meet it, or when your nose meets it. It is a common cold-causing germ. Scientists at the National Institute of Health in Washington washed it, with milk, from the nose of a man coming down with a cold. For almost a year they have kept it growing in fertile hen's eggs. And when they sprayed it into the noses of human volunteers, 57 of 60 healthy men got the same kind of mean cold.

This germ going under the name of V14A in the laboratory, may not be the only germ that causes colds. But there is no doubt that it is one of them, and now that the scientists have got it in their eggs and can keep it there, they can go on to the hard job of trying to find a way of curing or preventing the cold it causes.

The letters and numbers of the name, V14A, identify the germ as having come from the fourteenth volunteer in the first nasal washing. Details about the isolation and study of it so far are reported by Drs. Norman H. Topping and Leon T. Atlas in the journal, *Science* (Dec. 26).

Dr. Atlas himself has a V14A cold all the time. That is because he goes every day to nearby Lorton Reformatory to spray the germ into the noses of the Lorton volunteers.

Lorton is the District of Columbia institution corresponding to penitentiaries in the states. Of its 2,000 inmates, 500 have volunteered to help in the fight on the common cold and 200 have so far been used. They get paid \$3 a week instead of the \$1 they would get from prison industry work. And they may draw all of this weekly for purchases at the canteen instead of having to put half of it in their parole fund.

Dr. Atlas located V14A when he was giving a physical examination to another scientist who had applied for a U. S. Public Health Service fellowship. Noticing as he looked down the man's throat and up his nose that there was a faint

reddening suggestive of an oncoming cold, he asked permission to get a nose washing. The man agreed. The first washing, done at three o'clock that afternoon, proved unsuccessful. So Dr. Atlas routed the man out of bed at midnight to get another. By that time his man had a faint "peppery feeling" in his nose, an itching in his palate and was beginning to sneeze. Next day he had a mean cold.

Drs. Topping and Atlas are sure their V14A is not a bacterium, because they treated the nasal washing with penicillin and streptomycin to get rid of any bacteria that might have been washed out with the cold germ. Later tests failed to show any bacteria in the cold-causing material. Other tests showed it is not the influenza virus.

The electron microscope has been turned on it by Dr. R. W. G. Wyckoff. His studies are just starting, but he has already seen some characteristic particles that have not so far been seen in material from normal allantoic fluids from eggs nor in such fluids of eggs inoculated with normal fluids. These particles, which are probably V14A itself, are of the same general size as influenza virus particles but readily distinguishable from them.

Science News Letter, January 24, 1948

CHEMISTRY

Quicker, Better Test for Meat Toughness Revealed

MEAT may become scarcer but it need not become tougher. To guard the consumer through establishment of easier and more objective testing for quality, Drs. Herbert Baker and George D. Palmer of the University of Alabama have devised a new chemical method.

First, the meat to be tested is immersed in a solution of nitric acid, which dissolves out the connective tissue that is the principal factor in toughness. Then a phospho-tungsten compound is added, producing a precipitate. This can be dissolved in boiling water; the tougher the meat, the longer it takes to dissolve the precipitate.

Science News Letter, January 24, 1948

BOTANY

NATURE RAMBLINGS

by Frank Thone



What Are Evergreens?

► "EVERGREEN" is very commonly used as equivalent to "conifer"; people say "evergreen" when they mean trees of the group that includes pines, spruces, firs, red cedars, etc. But not all evergreens are conifers, and there are some conifers that are not evergreens.

Properly speaking, an evergreen is any tree or lesser plant whose foliage stays green all winter, regardless of size or family connections. Plants of opposite habit, that lose their leaves in autumn and grow new ones in spring, are termed "deciduous." The conifers listed in the first paragraph, and many more besides, are true evergreens; but at least two American conifers, the bald cypress and the larch or tamarack, lose their leaves each year and are thus deciduous.

Broad-leaved trees like maples, elms and oaks are so universally deciduous in northern latitudes that they are usually thought of as typical deciduous trees.

YOUR HAIR AND ITS CARE

By O.L. Levin, M.D. and H.T. Behrman, M.D.

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Yet farther south there are numerous broad-leaved trees and shrubs that are just as typically evergreen: such things as bay, mountain laurel, rhododendron, liveoak and some species of magnolia.

That botanical kinship has nothing to do with evergreeness or its opposite is well typified in the heath family, of which mountain laurel and rhododendrons are examples. Azaleas, which are very closely related to the rhododendrons, are deciduous, as is the sourwood, the one tree-sized member of this family in our southeastern states. Among this family's shrubs of lower stature, cranberries and bearberries are evergreen, whereas huckleberries and blueberries are deciduous.

We are apt to think of herbs, the plants that have no woody stems, as deciduous, dying down to ground level every winter even when they live to bloom another day by means of rootstocks or bulbs underground. Yet there are many evergreens among these plants: mosses and some ferns, ground-pines, hepaticas, trailing arbutus, day-flower and (of course) wintergreen.

Evergreen leaves naturally do not live forever. Some, like the overwintering leaves of hepatica, wither and die soon after the new leaves unfold in spring; others like most pines, hang onto their leaves as much as five years. There is no set rule; each species makes its own rules.

Science News Letter, January 24, 1948

MEDICINE

Tropical Diseases Recur

Servicemen and travellers may have a flare-up of maladies strange to the U. S. years after their return from abroad. Many have vague symptoms.

► TROPICAL diseases strange to the United States may flare up in servicemen and in postwar travellers years after their return from overseas, doctors are warned in the *Journal of the American Medical Association* (Jan. 10).

Many of these diseases may get into the chronic form with vague symptoms that are like those found in psychoneurotic patients. A tired feeling, frequent headaches, loss in weight, nervousness, palpitation, uneasiness and mild to moderate stomach and intestinal distress are symptoms of chronic forms of amebiasis, schistosomiasis, malaria and Chagas' disease as well as of psychoneurosis.

A case of kala-azar developing in a pilot officer 17 months after his return to the United States and 19 months after he had left China where he probably got the disease is reported from the AAF Regional Station Hospital at San Antonio by Capt. Moise D. Levy, Jr., of the Medical Corps and Lt. Marvin J. Yengst of the Sanitary Corps.

The young pilot's symptoms were vague and at first it was thought he had malaria and he was treated for that. But no malaria parasite could be found so that treatment was stopped and he was put on penicillin. After about two weeks during which time many tests were made, a button of bone was cut from

his chest bone with the kind of crown saw surgeons call a trephine.

Kala-azar germs were found in the marrow of this bit of chest bone. The patient was promptly given doses of an antimony compound, standard treatment for kala-azar.

"Response to treatment was dramatic," the Army surgeons reported. "The temperature returned to normal after three days. Appetite greatly improved. Four meals daily were enjoyed. There was a progressive gain in weight from 130 pounds to 152 pounds."

Two months later the patient was returned to duty with no sign of the disease.

Science News Letter, January 24, 1948

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ANIMAL BABIES—Kathryn and Byron Jackson, pictures by Adele Werber—*Simon & Schuster*, 39 p., illus., 25 cents. Pictures and stories about many wild baby animals, for the very young.

THE BATTLE FOR TARAWA—James R. Stockman—*Govt. Printing*, 86 p., illus., \$1.50. One of a series of monographs prepared by Historical Section, Div. of Public Information, U. S. Marine Corps, presenting details on the first example of a sea-borne assault against a heavily defended coral atoll.

A BIBLIOGRAPHY OF DIETETIC CAREERS—*Am. Dietetic Assn.*, 15 p., paper, 10 cents.

THE CHEMICAL ANALYSIS OF FOODS—Henry Edward Cox—*Sherwood Press*, 3rd ed., 317 p., illus., \$8.00. A handbook for the food industry in general and health officers and food chemists in particular, covering the examination of foodstuffs and detection of adulterants.

COMPOSITION AND PICTURES—Eleanor Parke Custis—*Am. Photographic Pub.*, 224 p., illus., \$6.00. A practical, detailed explanation of the basic rules of composition as applied to camera work.

THE ELECTRON MICROSCOPE—V. E. Coss-

lett—*Sigma*, 128 p., illus., \$1.55. A non-technical description of construction and operation of the electron microscope together with its present limitations and future developments.

EXPERIMENTAL EMBRYOLOGY IN THE NETHERLANDS 1940-1945—M. W. Woerdeman and Chr. P. Raven—*Elsevier*, 132 p., illus., \$2.50. Experiments on amphibian eggs and avian embryos described in Monographs on the Progress of Research in Holland During the War, No. 10.

FLYING MINUTE MEN: the Story of the Civil Air Patrol—Robert E. Neprud, with cartoons by Zack Mosley—*Duell, Sloan and Pearce*, 243 p., illus., \$3.00. The saga of a volunteer organization pledged to the nation's defense—its role in World War II and place in the postwar aviation picture.

FUNDAMENTALS IN CHEMICAL PROCESS CALCULATIONS—Otto L. Kowalewski—*Macmillan*, 158 p., \$2.80. Textbook for chemical engineering students in their second year.

GOLDEN MULTITUDES: the Story of Best Sellers in the United States—Frank Luther Mott—*Macmillan*, 357 p., \$5.00. An entertaining account of American best sellers from 1662 to 1945 with discussion of what makes them so.

HOW TO DOUBLE YOUR VOCABULARY—S. Stephenson Smith—*Crowell*, 360 p., paper \$1.50, cloth \$3.00. By means of vocabulary tests throughout the book, the author attempts to help you ascertain your command of words, including the latest language used in the newspapers, radio and science.

INTRODUCTION TO MEDICAL SCIENCE—Gulli Lindh Muller and Dorothy E. Dawes—*Saunders*, 2nd ed., 580 p., illus., \$3.00. A textbook for the student nurse with emphasis on fundamental principles of medical science, revised to include recent outstanding findings in research during World War II.

A LIST AND INDEX OF THE PUBLICATIONS OF THE UNITED STATES NATIONAL MUSEUM (1875-1946)—Smithsonian Inst. Editorial Div.—*Govt. Printing*, U. S. Nat. Museum Bulletin 193, 306 p., paper, \$1.00. Published as part of official observance of 100th anniversary of founding of Smithsonian Institution.

THE MENTAL HOSPITAL: a Guide for the Citizen—Edith M. Stern, with foreword by Samuel W. Hamilton—*Nat. Com. for Mental Hygiene*, 45 p., paper, 38 cents. A handbook intended to help the layman properly evaluate conditions in mental institutions.

MODERN PACKAGING ENCYCLOPEDIA 1948—Staff of Modern Packaging Magazine—*Packaging Catalog Corp.*, 1205 p., illus., \$6.50. Covers the broad field of packaging including basic economic factors and principles together with a useful buyers' guide.

MOLECULES AGAINST MICROBES—E. S. Duthie—*Sigma*, 156 p., illus., \$1.25. The science of chemotherapy, chemical attack on infections caused by protozoa and bacteria, is presented in popular language.

NEUTRON EFFECTS ON ANIMALS—Biochemical Research Foundation—*Williams & Wilkins*, 198 p., illus., \$3.00. Reports on physiological effects of neutron bombardments to tissues and organs under different conditions, including effects on mortality, plasma, body weight, bone marrow, etc.

NEW COLLEGE STANDARD DICTIONARY—Charles Earle Funk, ed.—*Funk & Wagnalls*, 1404 p., illus., \$6.00. Printed in clear, easy-to-read type with simplified system of phonetic pronunciation, this emphatic edition of a standard reference book lists more than 145,000 words including many recent terms used in modern science.

ORTHOPEDIC SURGERY FOR NURSES INCLUDING NURSING CARE—Philip Lewin—*Saunders*, 4th ed., 563 p., illus., \$3.75. This textbook for students and graduate nurses presents the latest facts on orthopedic care, stressing actual nursing care and including many advances proven practical in treating war casualties.

PHOTOGRAPHIC FACTS AND FORMULAS—E. J. Wall and Franklin I. Jordan—*Am. Photographic Pub.*, rev. ed., 364 p., \$5.00. Handbook of practical directions and formulas for commonly used photographic processes.

POSTWAR PROBLEMS OF MIGRATION—Milbank Memorial Fund, 173 p., illus., paper, \$1.00. Papers presented at the round table on population problems at the Fund's 1946 conference, covering world aspects of migration, immigration to U. S., and U. S. internal migration.

WIND WAVES AT SEA, BREAKERS AND SURF—Henry B. Bigelow and W. T. Edmondson—*Govt. Printing*, Hydrographic Office Publication No. 602, 177 p., illus., \$2.80. Based on research and observations over a long period of time, this detailed and non-technical discussion of oceanography will prove useful to mariners and non-seafarers alike.

THE WORLD'S GREAT LAKES—Ferdinand C. Lane—*Doubleday*, 254 p., \$3.50. An interesting story written in easy manner giving a world of information about lakes, ranging from their natural formation and discovery to man-made creations and problems.

Science News Letter, January 24, 1948

ENGINEERING

Material May Cut Danger From Electrical Failure

► LESS danger from fire and electrical failure, especially on ships, was forecast from the development of a new material with high insulation value even when wet.

The new material, a glass cloth laminate, was developed by the Princeton University Plastics Laboratory for the U. S. Navy Bureau of Ships and the U. S. Signal Corps. Prof. Louis F. Rahm, director of the laboratory, predicts that the new development will be used in the manufacture of electrical components for marine installation.

Science News Letter, January 24, 1948



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New Machines and Gadgets •

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., Washington 6, D. C. and ask Gadget Bulletin 398. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

• **EGG CRACKER** and holder permits the opening and eating of soft boiled eggs without burnt fingers or mess. It is a plastic device in two parts; one is the egg-holder, the other fits over the top end and cuts the shell by means of sharp-pointed strips squeezed inward by the fingers.

Science News Letter, January 24, 1948

• **BARREL TILTER** and support, a home-made affair for an oil or gasoline barrel, is a box-like frame of welded pipe which has one side and end made of curved piping. A barrel placed against two parallel straight sides can be raised and tilted to a horizontal position by means of the curved sides.

Science News Letter, January 24, 1948

• **SPECIAL LENS**, fitted with brackets to slide under the home television receiver, will magnify the picture of the television screen about three times without decreasing its brightness, according to claims. The lens may be adjusted vertically and horizontally to produce the desired picture size.

Science News Letter, January 24, 1948

• **TANK-TYPE DEVICE**, installed in the hot-water line to deliver a rust-inhibiting chemical to the water, prevents damage to clothing in the washing from rusty water. The chemical used is a modified form of Calgon, sodium hexametaphosphate.

Science News Letter, January 24, 1948



• **CIGARETTE DISPENSER** and lighter, for use in an automobile as shown in the picture, drops a single cigarette into a small trough with a single pressure on a lever. In the trough, it is held by a spring against a hot filament and in four seconds is lighted.

Science News Letter, January 24, 1948

• **RUBBER HARDNESS GAUGE**, size and shape of a fountain pen, is operated when an indenter at one end is pressed firmly against the rubber surface. It has no cams, gears, levers or pivots to get out of order, and the gauge

indicator holds in position indefinitely, making exact readings possible.

Science News Letter, January 24, 1948

• **LABORATORY FLOOR TRUCK**, for carrying carboys of acids or tanks of compressed gases, holds the container in an upright or tilted position as desired. Its carrying rack with its nose plate base pivots on the truck's axle and can stand upright or rest back against the handle bars.

Science News Letter, January 24, 1948

• **ALUMINUM SHEATH** for telephone cables, to supplement the familiar lead-covered cable, is a thin sheet of the metal covered with rubber-like flexible black plastic. It will be made in sizes ranging from small cables to those containing hundreds of pairs of wires.

Science News Letter, January 24, 1948

Question Box

DENTISTRY

What tests are being made to prevent tooth decay? p. 54.

MEDICINE

How has a new drug extended the usefulness of the mold remedies? p. 55.

How may infants be saved from being born with defects? p. 53.

How was a Science Service story instrumental in getting money to promote cancer

Photographs: Cover, Buffalo Museum of Science; p. 51, p. 54, p. 58, Fremont Davis; p. 53, Dr. Charles J. Lyon; p. 55, Dr. T. D. Fontaine.

research? p. 51.

What does the new blood center, just opened, hope to accomplish? p. 52.

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CHEMISTRY

How have candies been made into better-balanced foods? p. 54.

ZOOLOGY

How does man's life-span compare with other warm-blooded animals? p. 58.

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